UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

ECOLOGICAL SITE DESCRIPTION

ECOLOGICAL SITE CHARACTERISTICS

Site Type: Rangeland

Site ID: R036XB121NM

Site Name: Shallow Sandstone

Precipitation or Climate Zone: 10 to 16 inches

Phase:

PHYSIOGRAPHIC FEATURES

Narrative:

The topography of this site is level to moderately sloping with slopes ranging from 0 to 15 percent. Elevation range from about 6,000 to 7,500 feet above sea level.

Land Form:

1. Scarp slope
2. Hill
3.

Aspect:

1. N/A
2.
3.

	Minimum	Maximum
Elevation (feet)	6,000	7,500
Slope (percent)	0	15
Water Table Depth (inches)	N/A	N/A

Flooding:	**Minimum**	**Maximum**
Frequency	N/A	N/A
Duration	N/A	N/A

Ponding:	**Minimum**	**Maximum**
Depth (inches)	N/A	N/A
Frequency	N/A	N/A
Duration	N/A	N/A

Runoff Class:

Negligible to medium.

CLIMATIC FEATURES

Narrative:

Average annual precipitation varies from about 10 inches to just over 16 inches. Fluctuations ranging from about 5 inches to 25 inches are not uncommon. The overall climate is characterized by cold dry winters in which winter moisture is less than summer. As much as half or more of the annual precipitation can be expected to come during the period of July through September. Thus, fall conditions are often more favorable for good growth of cool-season perennial grasses, shrubs, and forbs than are those of spring.

The average frost-free season is about 120 days and extends from approximately mid May too early or mid September. Average annual air temperatures are 50 degrees F or lower and summer maximums rarely exceed 100 degrees F. Winter minimums typically approach or go below zero. Monthly mean temperatures exceed 70 degrees F for the period of July and August.

Rainfall patterns generally favor warm-season perennial vegetation, while the temperature regime tends to favor cool-season vegetation. This creates a somewhat complex community of plants on any given ecological site, which is quite susceptible to disturbance and is at or near its productive potential only when both the natural warm and cool-season dominants are present.

Climate data was obtained from http://www.wrcc.sage.dri.edu/summary/climsmnm.html web site using 50% probability for freeze-free and frost-free seasons using 28.5 degrees F and 32.5 degrees F respectively.

	Minimum	Maximum
Frost-free period (days):	102	148
Freeze-free period (days):	119	174
Mean annual precipitation (inches):	10	16

Monthly moisture (inches) and temperature (^{0}F) distribution:

	Precip. Min.	Precip. Max.	Temp. Min.	Temp. Max.
January	.40	.91	12.9	47.0
February	.43	.65	16.6	51.2
March	.47	1.10	20.9	57.1
April	.30	.49	26.1	65.3
May	.46	.98	33.4	74.2
June	.51	.57	41.4	84.2
July	2.15	3.45	50.4	85.1
August	2.28	3.03	48.7	82.4
September	1.29	1.68	41.4	77.9
October	.81	1.12	29.4	69.2
November	.38	.71	19.1	57.3
December	.53	.95	13.1	48.9

Climate Stations:

				Period			
Station ID	290640	Location	Augustine 2E, NM	From:	05/01/26	To:	07/31/00
Station ID	296812	Location	Pietown 19NE, NM	From:	09/01/88	To:	07/31/00
Station ID	297180	Location	Quemado, NM	From:	08/01/15	To:	07/31/00

INFLUENCING WATER FEATURES

Narrative:

This site is not influenced by water from a wetland or stream.

Wetland description:

System	Subsystem	Class
N/A		

If Riverine Wetland System enter Rosgen Stream Type:
N/A

REPRESENTATIVE SOIL FEATURES

Narrative:

These soils are shallow to very shallow over sandstone. Surface textures are medium too coarse and may be stony or gravelly. Permeability is rapid to moderately slow. The available water-holding capacity is generally low.

Parent Material Kind: Colluvium
Parent Material Origin: Sandstone-unspecified

Surface Texture:

1. Gravelly loam
2. Fine sandy loam
3. Sandy loam 4. Extremely gravelly fine sandy loam 5. Loamy fine sandy 6. Loam 7. Channery sandy loam 8. Very channery sandy loam 9. Very gravelly sandy loam 10. Channery loam

Surface Texture Modifier:

1. Gravel
2. Channery
3. Cobble

Subsurface Texture Group: Loamy

Surface Fragments <=3" (% Cover): >60

Surface Fragments >3" (% Cover): 35 to 60

Subsurface Fragments <=3" (%Volume): 15 to 35

Subsurface Fragments >=3" (%Volume): 35 to 60

	Minimum	**Maximum**
Drainage Class:	Well	Excessively
Permeability Class:	Impermeable	Moderately rapid
Depth (inches):	4	20
Electrical Conductivity (mmhos/cm):	0.00	8.00
Sodium Absorption Ratio:	0.00	5.00
Soil Reaction (1:1 Water):	6.6	8.4
Soil Reaction (0.1M CaCl2):	N/A	N/A
Available Water Capacity (inches):	3	6
Calcium Carbonate Equivalent (percent):	N/A	N/A

PLANT COMMUNITIES

Ecological Dynamics of the Site:

Plant Communities and Transitional Pathways (diagram)

Plant Community Name: Historic Climax Plant Community

Plant Community Sequence Number: 1 **Narrative Label**: HCPC

Plant Community Narrative: Historic Climax Plant Community
This site is characterized by relatively moderate production and is dominated by blue grama and sideoats grama. Common, but occurring in lesser amounts, are little bluestem, Indian ricegrass, New Mexico feathergrass, galleta, and sometimes needleandthread. Other characteristic species include sand dropseed, spike dropseed, threeawns, winterfat, Bigelow sagebrush, pinyon, and juniper.

Canopy Cover:	
Trees	5 %
Shrubs and half shrubs	5 %
Ground Cover (Average Percent of Surface Area).	
Grasses & Forbs	15
Bare ground	50
Surface gravel	15
Surface cobble and stone	10
Litter (percent)	10
Litter (average depth in cm.)	1

Plant Community Annual Production (by plant type):

Annual Production (lbs/ac)

Plant Type	Low	RV	High
Grass/Grasslike	220	390	560
Forb	22	39	56
Tree/Shrub/Vine	36	63	91
Lichen			
Moss			
Microbiotic Crusts			
Total	275	488	700

Plant Community Composition and Group Annual Production:

Plant Type - Grass/Grasslike

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
1	BOCU	Sideoats Grama	122 – 171	122 – 171
2	BOGR2	Blue Grama	49 – 73	49 – 73
3	SCSC	Little Bluestem	24 – 73	24 – 73
4	NENE5	New Mexico Feathergrass	49 – 98	49 – 98
	ELEL5	Bottlebrush Squirreltail		
	HECO26	Needleandthread		
	POFE	Muttongrass		
	SONU2	Indian Ricegrass		
	PASM	Western Wheatgrass		
5	PLJA	Galleta	5 – 24	5 – 24
	SPCR	Sand Dropseed		
	SPCO4	Spike Dropseed		
	LYPH	Wolftail		
	SPAI	Alkali Sacaton		
6	BOER4	Black Grama	5 – 20	5 – 20
7	BOHI2	Hairy Grama	5 – 24	5 - 24
	ATIST	Threeawn spp.		
	MUPU2	Sandhill Muhly		

Plant Type - Forb

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
8	2FP	Perennial Forbs	15 – 39	15 – 39
9	2FA	Annual Forbs	5 – 15	5 - 15

Plant Type – Tree/Shrub/Vine

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
10	PIED	Pinyon Pine	5 – 24	5 – 24
	JUNIP	Juniper spp.		
11	ERNAN5	Rubber Rabbitbrush	24 – 49	24 – 49
	ATCA2	Fourwing Saltbush		
	ARBI3	Bigelow Sagebrush		
	ARFI2	Sand Sagebrush		
	CEMOP	Hairy Mountainmahogany		
	KRLA	Winterfat		
12	GUSA2	Broom Snakeweed	5 – 15	5 - 15

Plant Type - Lichen

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production

Plant Type - Moss

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production

Plant Type - Microbiotic Crusts

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production

Plant Growth Curves

Growth Curve ID 0312NM

Growth Curve Name: HCPC

Growth Curve Description: Mixed warm/cool-season grassland with scattered shrubs.

Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
0	0	5	7	10	15	25	25	8	5	0	0

ECOLOGICAL SITE INTERPRETATIONS

Animal Community:

Habitat for Wildlife:

This ecological site provides habitats which support a resident animal community that is characterized by pronghorn antelope, coyote, black-tailed jackrabbit, white-throated woodrat, pinyon mouse, sparrow hawk, Cassin's kingbird, chipping sparrow, common raven, plains spadefoot toad, leopard lizard, plateau whiptail, desert short-horned lizard, and prairie rattlesnake.

Mourning dove nest on the site and the golden eagle and prairie falcon hunt over it.

Hydrology Functions:

The runoff curve numbers are determined by field investigations using hydrologic cover conditions and hydrologic soil groups.

Hydrologic Interpretations	
Soil Series	**Hydrologic Group**
Atarque	D
Bond	D
Evpark	D
Farb	D
Mion	D
Moenkopi	D
Rizno	D
Rizozo	D
San Mateo	D
Skyvillage	D
Travessilla	D
Vessilla	D
Winona	D

Recreational Uses:

The site has moderate to high potential for semi-improved picnicking and camping sites which are designed with erosion hazard and other problems inherent to shallow soils in mind. It also offers potential for hiking, horseback riding, hunting, nature observation and photography. Ancient and gnarled junipers are found which, for many, provide a very striking source of natural beauty. This is especially true when they are seen against a backdrop of distant open-space landscapes typical of the region in which the site is found.

Wood Products:

This site has very limited potential for wood products, and this is restricted almost entirely to fence post and firewood production.

Other Products:

Grazing:

This site is suitable for grazing by most kinds and classes of livestock without regard to season of the year. It should not, however, be subjected to continuous heavy use and is not well suited for continuous yearlong grazing on a long-term basis. Under these conditions, rapid deterioration of the plant community may take place, and the site may become characterized by a dominance of low-value grasses, woody plants, vastly reduced productivity, and a high incidence of surface erosion. Mechanical brush control is generally unfeasible due to shallow soil, and recovery using improved grazing management alone may be difficult to achieve.

Other Information:

Guide to Suggested Initial Stocking Rate Acres per Animal Unit Month

Similarity Index	**Ac/AUM**
100 - 76	4.0 – 5.2
75 – 51	5.0 – 7.5
50 – 26	7.0 – 13.5
25 – 0	13.5+

Plant Part	Code	Species Preference	Code
Stems	S	None Selected	NS
Leaves	L	Preferred	P
Flowers	F	Desirable	D
Fruits/Seeds	F/S	Undesirable	U
Entire Plant	EP	Not Consumed	NC
Underground Parts	UP	Emergency	E
		Toxic	T

Plant Preference by Animal Kind:

Animal Kind: Livestock
Animal Type: Cattle

Common Name	Scientific Name	Plant Part	Forage Preferences											
			J	F	M	A	M	J	J	A	S	O	N	D
Sideoats Grama	Bouteloua curtipendula	EP	P	P	P	P	P	P	P	P	P	P	P	P
Blue Grama	Bouteloua gracilis	EP	D	D	D	D	P	P	P	P	P	D	D	D
Little Bluestem	Schizachyrium scoparium	EP	D	D	D	P	P	P	P	D	D	D	D	D
New Mexico Feathergrass	Hesperostipa neomexicana	EP	D	D	P	P	P	D	D	D	D	D	D	D
Needleandthread	Hesperostipa comata	EP	D	D	P	P	P	D	D	D	D	D	D	D
Indian Ricegrass	Achnatherum hymenoides	EP	P	P	P	P	P	P	P	P	P	P	P	P
Western Wheatgrass	Pascopyrum smithii	EP	D	D	P	P	P	D	D	D	D	D	D	D
Spike Muhly	Muhlenbergia wrightii	EP	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
Black Grama	Bouteloua eriopoda	EP	P	P	P	D	D	D	D	D	D	D	P	P
Fourwing Saltbush	Atriplex canescens	EP	P	P	P	P	P	D	D	D	D	D	D	P
Winterfat	Krascheninnikovia lanata	EP	D	D	P	P	P	P	P	P	D	D	D	D
Hairy Mountainmahogany	Cercocarpus montanus	EP	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S

Animal Kind: Livestock
Animal Type: Horses

Common Name	Scientific Name	Plant Part	Forage Preferences											
			J	F	M	A	M	J	J	A	S	O	N	D
Sideoats Grama	Bouteloua curtipendula	EP	P	P	P	P	P	P	P	P	P	P	P	P
Blue Grama	Bouteloua gracilis	EP	D	D	D	D	P	P	P	P	P	D	D	D
Little Bluestem	Schizachyrium scoparium	EP	D	D	D	P	P	P	P	D	D	D	D	D
New Mexico Feathergrass	Hesperostipa neomexicana	EP	D	D	P	P	P	D	D	D	D	D	D	D
Needleandthread	Hesperostipa comata	EP	D	D	P	P	P	D	D	D	D	D	D	D
Indian Ricegrass	Achnatherum hymenoides	EP	P	P	P	P	P	P	P	P	P	P	P	P
Western Wheatgrass	Pascopyrum smithii	EP	D	D	P	P	P	D	D	D	D	D	D	D
Spike Muhly	Muhlenbergia wrightii	EP	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
Black Grama	Bouteloua eriopoda	EP	P	P	P	D	D	D	D	D	D	D	P	P

Animal Kind: Livestock
Animal Type: Sheep

Common Name	Scientific Name	Plant Part	Forage Preferences											
			J	F	M	A	M	J	J	A	S	O	N	D
Most Perennial Forbs	Various	EP	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
Winterfat	Krascheninnikovia lanata	EP	P	P	P	P	P	P	P	P	P	P	P	P
Western Wheatgrass	Pascopyrum smithii	EP	U	U	D	D	D	D	D	D	D	D	D	U
Fourwing Saltbush	Atriplex canescens	EP	P	P	P	P	P	D	D	D	D	D	D	P
Sideoats Grama	Bouteloua curtipendula	EP	P	P	P	P	P	P	P	P	P	P	P	P
Blue Grama	Bouteloua gracilis	EP	D	D	D	D	P	P	P	P	P	D	D	D
Galleta	Pleuraphis jamesii	EP	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
New Mexico Feathergrass	Hesperostipa neomexicana	EP	D	D	P	P	P	D	D	D	D	D	D	D
Indian Ricegrass	Achnatherum hymenoides	EP	P	P	P	P	P	D	D	D	D	D	D	P
Little Bluestem	Schizachyrium scoparium	EP	D	D	D	D	D	P	P	D	D	D	D	D

Animal Kind: Wildlife
Animal Type: Antelope

Common Name	Scientific Name	Plant Part	Forage Preferences											
			J	F	M	A	M	J	J	A	S	O	N	D
Most Perennial Forbs	Various	EP	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
Winterfat	Krascheninnikovia lanata	EP	D	D	D	D	D	D	D	D	D	D	D	D
Western Wheatgrass	Pascopyrum smithii	EP	U	U	D	D	D	U	U	U	U	U	U	U
Fourwing Saltbush	Atriplex canescens	EP	D	D	D	D	D	D	D	D	D	D	D	D
New Mexico Feathergrass	Hesperostipa neomexicana	EP	U	U	D	D	D	U	U	U	D	D	D	U
Indian Ricegrass	Achnatherum hymenoides	EP	U	U	P	P	P	U	U	U	D	D	D	U

Animal Kind: Wildlife
Animal Type: Deer

Common Name	Scientific Name	Plant Part	Forage Preferences											
			J	F	M	A	M	J	J	A	S	O	N	D
Fourwing Saltbush	Atriplex canescens	EP	P	P	D	D	D	D	D	D	D	D	D	P
Winterfat	Krascheninnikovia lanata	EP	D	D	D	D	D	D	D	D	D	D	D	D
Western Wheatgrass	Pascopyrum smithii	EP	U	U	P	P	P	U	U	U	U	U	U	U
Juniper	Juniperus spp.	F/S	P	P	U	U	U	U	U	U	U	U	U	P
Bigelow Sagebrush	Artemisia bigelovii	EP	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
Needleandthread	Hesperostipa comata	EP	U	U	D	D	D	U	U	U	D	D	D	U
New Mexico Feathergrass	Hesperostipa neomexicana	EP	U	U	D	D	D	U	U	U	D	D	D	U
Hairy Mountainmahogany	Cercocarpus montanus	EP	P	P	P	P	P	P	P	P	P	P	P	P
Most Perennial Forbs	Various	EP	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S

SUPPORTING INFORMATION

Associated sites:

Site Name	Site ID	Site Narrative

Similar sites:

Site Name	Site ID	Site Narrative

State Correlation:

This site has been correlated with the following sites: _____

Inventory Data References:

Data Source	# of Records	Sample Period	State	County

Type Locality:

State: **New Mexico**

County: **Catron, Socorro**

Latitude: _____

Longitude: _____

Township: _____

Range: _____

Section: _____

Is the type locality sensitive? **Yes** ☐ **No** ☐

General Legal Description: _____

Relationship to Other Established Classifications:

Other References:

Data collection for this site was done in conjunction with the progressive soil surveys within the New Mexico and Arizona Plateaus and Mesas 36 Major Land Resource Area of New Mexico. This site has been mapped and correlated with soils in the following soil surveys: McKinley, Sandoval, Catron, Socorro, Cibola.

Characteristic Soils Are:	
Moenkopi	
Other Soils included are:	
Atarque, Bond, Evpark, Farb, Mion, Rizno	Rizozo, San Mateo, Skyvillage, Travessilla
Vessilla, Winona	

Site Description Approval:

Author	Date	Approval	Date
Don Sylvester	02/15/80	Durwood E. Ball	03/27/80

Site Description Revision:

Author	Date	Approval	Date
Elizabeth Wright	07/08/02	George Chavez	12/16/02